

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	14-8929-2351	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	11/30/2016	Test Type	Acute
Duration	96h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	0.98
Mean used in Calculation (transformed)	1.41	1.37
Variance used in Calculation (transformed)	0.000	0.007
Standard Deviation of Transformed Data	0.000	0.081
CV of Transformed Data	0.000	0.059
n	4	4

Mean Percent Effect at the IWC

2.50

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.9314	3	1.6377	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	9		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	00-0932-7329	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	11/30/2016	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.83	0.88
Mean used in Calculation (transformed)	1.15	1.22
Variance used in Calculation (transformed)	0.001	0.001
Standard Deviation of Transformed Data	0.027	0.024
CV of Transformed Data	0.024	0.020
n	5	5

Mean Percent Effect at the IWC

-5.52

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
24.8200	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	85
100	80
100	84
100	83
100	85

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	88
100	89
100	90
100	87
100	86

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	00-0932-7329	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	11/30/2016	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	15.64	13.52
Mean used in Calculation (non-transformed)	15.64	13.52
Variance used in Calculation (non-transformed)	1.028	0.507
Standard Deviation of Raw Data	1.014	0.712
CV of Raw Data	0.065	0.053
n	5	5

Mean Percent Effect at the IWC

13.55

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.8421	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	16.5
10	16.3
10	14.8
10	14.3
10	16.3

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	14
10	13.8
10	12.3
10	14
10	13.5

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	21-2822-8614	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	2/15/2017	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.95	0.93
Mean used in Calculation (transformed)	1.33	1.29
Variance used in Calculation (transformed)	0.009	0.007
Standard Deviation of Transformed Data	0.094	0.081
CV of Transformed Data	0.071	0.063
n	4	4

Mean Percent Effect at the IWC

2.63

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
4.0631	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	10		
10	10		
10	9		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	10		
10	9		
10	9		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-7602-7453	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/15/2017	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.92	0.86
Mean used in Calculation (transformed)	1.29	1.19
Variance used in Calculation (transformed)	0.003	0.001
Standard Deviation of Transformed Data	0.053	0.033
CV of Transformed Data	0.041	0.028
n	5	5

Mean Percent Effect at the IWC

6.52

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.5571	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	93		
100	95		
100	94		
100	88		
100	90		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	87		
100	84		
100	88		
100	88		
100	83		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-7602-7453	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/15/2017	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	14.42	13.04
Mean used in Calculation (non-transformed)	14.42	13.04
Variance used in Calculation (non-transformed)	0.337	0.513
Standard Deviation of Raw Data	0.581	0.716
CV of Raw Data	0.040	0.055
n	5	5

Mean Percent Effect at the IWC

9.57

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.9357	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	14
10	13.8
10	14.5
10	14.5
10	15.3

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	12.3
10	13.8
10	13.8
10	12.8
10	12.5

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	15-2236-2247	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	5/2/2017	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.90	0.95
Mean used in Calculation (transformed)	1.25	1.33
Variance used in Calculation (transformed)	0.016	0.009
Standard Deviation of Transformed Data	0.125	0.094
CV of Transformed Data	0.099	0.071
n	4	4

Mean Percent Effect at the IWC

-5.56

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
4.7721	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	8		
10	9		
10	9		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	10		
10	9		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-0081-6497	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	5/2/2017	Test Type	Chronic
Duration	46h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.96	0.96
Mean used in Calculation (transformed)	1.37	1.36
Variance used in Calculation (transformed)	0.000	0.001
Standard Deviation of Transformed Data	0.021	0.023
CV of Transformed Data	0.016	0.017
n	5	5

Mean Percent Effect at the IWC

0.21

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
26.9785	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	97
100	95
100	96
100	95
100	96

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	95
100	96
100	97
100	95
100	95

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-0081-6497	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	5/2/2017	Test Type	Chronic
Duration	46h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	15.52	15.28
Mean used in Calculation (non-transformed)	15.52	15.28
Variance used in Calculation (non-transformed)	0.082	0.032
Standard Deviation of Raw Data	0.286	0.179
CV of Raw Data	0.018	0.012
n	5	5

Mean Percent Effect at the IWC

1.55

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
29.1200	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	15.5
10	15.3
10	15.3
10	16
10	15.5

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	15
10	15.3
10	15.3
10	15.3
10	15.5

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	19-4836-3692	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	7/25/2017	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	0.98
Mean used in Calculation (transformed)	1.41	1.37
Variance used in Calculation (transformed)	0.000	0.007
Standard Deviation of Transformed Data	0.000	0.081
CV of Transformed Data	0.000	0.059
n	4	4

Mean Percent Effect at the IWC

2.50

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.9314	3	1.6377	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	9		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-3790-8842	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	7/25/2017	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.89	0.68
Mean used in Calculation (transformed)	1.24	0.97
Variance used in Calculation (transformed)	0.016	0.002
Standard Deviation of Transformed Data	0.127	0.048
CV of Transformed Data	0.102	0.050
n	5	5

Mean Percent Effect at the IWC

23.70

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
0.7080	5	2.0150	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	97		
100	81		
100	95		
100	81		
100	89		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	70		
100	64		
100	73		
100	62		
100	69		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-3790-8842	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	7/25/2017	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	12.68	12.26
Mean used in Calculation (non-transformed)	12.68	12.26
Variance used in Calculation (non-transformed)	0.352	0.063
Standard Deviation of Raw Data	0.593	0.251
CV of Raw Data	0.047	0.020
n	5	5

Mean Percent Effect at the IWC

3.31

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
12.0364	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	12.3
10	12.5
10	13.3
10	13.3
10	12

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	12
10	12.5
10	12
10	12.5
10	12.3

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	07-2770-7486	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	10/19/2017	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.95	0.92
Mean used in Calculation (transformed)	1.33	1.29
Variance used in Calculation (transformed)	0.009	0.021
Standard Deviation of Transformed Data	0.094	0.145
CV of Transformed Data	0.071	0.112
n	4	4

Mean Percent Effect at the IWC

2.83

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
2.8014	4	1.5332	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	10
10	10
10	9
10	9

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	8
9	9
10	10
10	9

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	15-3050-6791	Test Species	<i>M. pyrifera (giant kelp)</i>
Test Date	10/19/2017	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.80	0.85
Mean used in Calculation (transformed)	1.10	1.18
Variance used in Calculation (transformed)	0.003	0.001
Standard Deviation of Transformed Data	0.057	0.030
CV of Transformed Data	0.052	0.026
n	5	5

Mean Percent Effect at the IWC

-7.04

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
14.8157	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	78		
100	87		
100	80		
100	76		
100	77		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	87		
100	82		
100	84		
100	86		
100	87		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	15-3050-6791	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	10/19/2017	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.48	15.94
Mean used in Calculation (non-transformed)	17.48	15.94
Variance used in Calculation (non-transformed)	0.467	0.623
Standard Deviation of Raw Data	0.683	0.789
CV of Raw Data	0.039	0.050
n	5	5

Mean Percent Effect at the IWC

8.81

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
6.7241	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	17.8		
10	18.5		
10	17.3		
10	16.8		
10	17		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	17.3		
10	15.8		
10	15.5		
10	15.8		
10	15.3		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	10-5585-9228	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	1/23/2018	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	1.00
Mean used in Calculation (transformed)	1.41	1.41
Variance used in Calculation (transformed)	0.000	0.000
Standard Deviation of Transformed Data	0.000	0.000
CV of Transformed Data	0.000	0.000
n	4	4

Mean Percent Effect at the IWC

0.00

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
			0.00000

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	07-2655-3340	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	1/23/2018	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.85	0.81
Mean used in Calculation (transformed)	1.18	1.12
Variance used in Calculation (transformed)	0.003	0.007
Standard Deviation of Transformed Data	0.057	0.083
CV of Transformed Data	0.048	0.074
n	5	5

Mean Percent Effect at the IWC

5.62

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.6033	5	2.0150	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	85		
100	85		
100	80		
100	91		
100	86		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	84		
100	87		
100	74		
100	73		
100	85		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	07-2655-3340	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	1/23/2018	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.06	11.94
Mean used in Calculation (non-transformed)	17.06	11.94
Variance used in Calculation (non-transformed)	0.318	0.648
Standard Deviation of Raw Data	0.564	0.805
CV of Raw Data	0.033	0.067
n	5	5

Mean Percent Effect at the IWC

30.01

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-2.1025	6	1.9432	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17
10	16.8
10	17
10	16.5
10	18

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	13
10	12.3
10	11.8
10	11.8
10	10.8

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	00-8288-4661	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	7/31/2018	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	0.98
Mean used in Calculation (transformed)	1.41	1.37
Variance used in Calculation (transformed)	0.000	0.007
Standard Deviation of Transformed Data	0.004	0.081
CV of Transformed Data	0.003	0.059
n	4	4

Mean Percent Effect at the IWC

2.50

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.9686	3	1.6377	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

9	9
10	10
10	10
10	10

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	10
10	9
10	10
10	10

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-7901-0230	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	7/31/2018	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.87	0.91
Mean used in Calculation (transformed)	1.21	1.28
Variance used in Calculation (transformed)	0.005	0.005
Standard Deviation of Transformed Data	0.074	0.070
CV of Transformed Data	0.061	0.055
n	5	5

Mean Percent Effect at the IWC

-4.82

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.3070	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	91		
100	81		
100	86		
100	93		
100	85		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	94		
100	96		
100	91		
100	90		
100	86		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-7901-0230	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	7/31/2018	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.22	16.70
Mean used in Calculation (non-transformed)	17.22	16.70
Variance used in Calculation (non-transformed)	0.297	0.575
Standard Deviation of Raw Data	0.545	0.758
CV of Raw Data	0.032	0.045
n	5	5

Mean Percent Effect at the IWC

3.02

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.8250	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	17.8		
10	17.5		
10	16.8		
10	17.5		
10	16.5		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	17.5		
10	17		
10	16.5		
10	15.5		
10	17		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-5569-9658	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	1/23/2019	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.90	0.85
Mean used in Calculation (transformed)	1.25	1.19
Variance used in Calculation (transformed)	0.016	0.033
Standard Deviation of Transformed Data	0.125	0.182
CV of Transformed Data	0.099	0.153
n	4	4

Mean Percent Effect at the IWC

5.56

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
1.7978	4	1.5332	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	9		
10	9		
10	8		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	8		
10	7		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-8662-2279	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/7/2019	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.89	0.64
Mean used in Calculation (transformed)	1.23	0.93
Variance used in Calculation (transformed)	0.001	0.002
Standard Deviation of Transformed Data	0.036	0.050
CV of Transformed Data	0.029	0.054
n	5	5

Mean Percent Effect at the IWC

27.54

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
0.3654	6	1.9432	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	86
100	89
100	88
100	92
100	88

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	58
100	71
100	65
100	62
100	65

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-8662-2279	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/7/2019	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.60	12.22
Mean used in Calculation (non-transformed)	16.60	12.22
Variance used in Calculation (non-transformed)	0.175	0.097
Standard Deviation of Raw Data	0.418	0.311
CV of Raw Data	0.025	0.025
n	5	5

Mean Percent Effect at the IWC

26.39

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-1.1633	7	1.8946	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	16.5
10	16.5
10	17
10	16
10	17

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	12.5
10	12.5
10	12
10	12.3
10	11.8

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-1354-0387	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	4/17/2019	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.93	0.95
Mean used in Calculation (transformed)	1.30	1.33
Variance used in Calculation (transformed)	0.022	0.009
Standard Deviation of Transformed Data	0.147	0.094
CV of Transformed Data	0.113	0.071
n	4	4

Mean Percent Effect at the IWC

-2.70

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.9114	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	8		
10	9		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	9		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	06-1722-8323	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	4/17/2019	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.88	0.92
Mean used in Calculation (transformed)	1.22	1.28
Variance used in Calculation (transformed)	0.001	0.001
Standard Deviation of Transformed Data	0.023	0.037
CV of Transformed Data	0.019	0.029
n	5	5

Mean Percent Effect at the IWC

-3.85

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
19.7922	5	2.0150	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	90
100	86
100	89
100	89
100	88

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	93
100	92
100	93
100	93
100	88

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	06-1722-8323	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	4/17/2019	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.08	16.60
Mean used in Calculation (non-transformed)	16.08	16.60
Variance used in Calculation (non-transformed)	0.137	0.095
Standard Deviation of Raw Data	0.370	0.308
CV of Raw Data	0.023	0.019
n	5	5

Mean Percent Effect at the IWC

-3.23

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
24.4736	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	15.5		
10	16.5		
10	16.2		
10	16.2		
10	16		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	16.5		
10	16.5		
10	17		
10	16.8		
10	16.2		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	06-5717-1310	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	8/1/2019	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	1.00
Mean used in Calculation (transformed)	1.41	1.41
Variance used in Calculation (transformed)	0.000	0.000
Standard Deviation of Transformed Data	0.000	0.000
CV of Transformed Data	0.000	0.000
n	4	4

Mean Percent Effect at the IWC

0.00

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
			0.00000

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-4816-2075	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/12/2019	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.86	0.74
Mean used in Calculation (transformed)	1.18	1.04
Variance used in Calculation (transformed)	0.002	0.002
Standard Deviation of Transformed Data	0.040	0.043
CV of Transformed Data	0.034	0.042
n	5	5

Mean Percent Effect at the IWC

13.08

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
6.5326	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	90		
100	85		
100	84		
100	83		
100	86		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	78		
100	78		
100	75		
100	70		
100	71		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-4816-2075	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/12/2019	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	18.08	16.88
Mean used in Calculation (non-transformed)	18.08	16.88
Variance used in Calculation (non-transformed)	0.247	0.512
Standard Deviation of Raw Data	0.497	0.716
CV of Raw Data	0.027	0.042
n	5	5

Mean Percent Effect at the IWC

6.64

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.2014	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17.5
10	18.3
10	18
10	18.8
10	17.8

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17
10	17.8
10	16.8
10	15.8
10	17

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-3202-5383	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	11/6/2019	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	1.00	1.00
Mean used in Calculation (transformed)	1.41	1.41
Variance used in Calculation (transformed)	0.000	0.000
Standard Deviation of Transformed Data	0.000	0.000
CV of Transformed Data	0.000	0.000
n	4	4

Mean Percent Effect at the IWC

0.00

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
			0.00000

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-4473-5056	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	11/6/2019	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.87	0.92
Mean used in Calculation (transformed)	1.21	1.29
Variance used in Calculation (transformed)	0.005	0.003
Standard Deviation of Transformed Data	0.074	0.051
CV of Transformed Data	0.061	0.039
n	5	5

Mean Percent Effect at the IWC

-6.21

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
11.6013	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	85		
100	82		
100	93		
100	84		
100	91		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	93		
100	91		
100	89		
100	93		
100	96		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-4473-5056	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	11/6/2019	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.58	17.72
Mean used in Calculation (non-transformed)	17.58	17.72
Variance used in Calculation (non-transformed)	0.047	0.672
Standard Deviation of Raw Data	0.217	0.820
CV of Raw Data	0.012	0.046
n	5	5

Mean Percent Effect at the IWC

-0.80

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
12.1338	4	2.1318	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17.3
10	17.5
10	17.8
10	17.8
10	17.5

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17.3
10	18.5
10	16.5
10	18
10	18.3

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	13-8901-4450	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	2/19/2020	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.95	0.98
Mean used in Calculation (transformed)	1.33	1.37
Variance used in Calculation (transformed)	0.009	0.007
Standard Deviation of Transformed Data	0.094	0.081
CV of Transformed Data	0.071	0.059
n	4	4

Mean Percent Effect at the IWC

-2.63

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.5322	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	9		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	10		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-6678-6543	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/19/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.82	0.35
Mean used in Calculation (transformed)	1.13	0.63
Variance used in Calculation (transformed)	0.002	0.000
Standard Deviation of Transformed Data	0.041	0.020
CV of Transformed Data	0.036	0.032
n	5	5

Mean Percent Effect at the IWC

57.46

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-13.3078	6	1.9432	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	85		
100	85		
100	81		
100	80		
100	78		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	36		
100	32		
100	37		
100	34		
100	35		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-6678-6543	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/19/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	19.10	12.40
Mean used in Calculation (non-transformed)	19.10	12.40
Variance used in Calculation (non-transformed)	0.070	0.050
Standard Deviation of Raw Data	0.265	0.224
CV of Raw Data	0.014	0.018
n	5	5

Mean Percent Effect at the IWC

35.08

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-14.3982	7	1.8946	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	18.8
10	19.2
10	19.5
10	19
10	19

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	12.5
10	12.5
10	12.5
10	12.5
10	12

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-6349-6775	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	3/18/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.09	0.08
Mean used in Calculation (transformed)	0.30	0.28
Variance used in Calculation (transformed)	0.000	0.000
Standard Deviation of Transformed Data	0.004	0.007
CV of Transformed Data	0.013	0.027
n	5	5

Mean Percent Effect at the IWC

14.12

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
14.5414	5	2.0150	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	0.91
10	0.89
10	0.87
10	0.87
10	0.85

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	0.76
10	0.69
10	0.78
10	0.75
10	0.79

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	03-6349-6775	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	3/18/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	18.10	15.10
Mean used in Calculation (non-transformed)	18.10	15.10
Variance used in Calculation (non-transformed)	0.019	0.019
Standard Deviation of Raw Data	0.137	0.137
CV of Raw Data	0.008	0.009
n	5	5

Mean Percent Effect at the IWC

16.57

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
19.9225	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	18
10	18
10	18.25
10	18
10	18.25

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	15
10	15.25
10	15
10	15.25
10	15

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	01-4033-6025	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	3/31/2020	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.09	0.08
Mean used in Calculation (transformed)	0.30	0.28
Variance used in Calculation (transformed)	0.000	0.000
Standard Deviation of Transformed Data	0.006	0.004
CV of Transformed Data	0.019	0.015
n	5	5

Mean Percent Effect at the IWC

15.21

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
19.4866	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	0.89		
10	0.92		
10	0.85		
10	0.88		
10	0.93		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	0.79		
10	0.77		
10	0.74		
10	0.75		
10	0.74		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	01-4033-6025	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	3/31/2020	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	18.08	16.24
Mean used in Calculation (non-transformed)	18.08	16.24
Variance used in Calculation (non-transformed)	0.137	0.128
Standard Deviation of Raw Data	0.370	0.358
CV of Raw Data	0.020	0.022
n	5	5

Mean Percent Effect at the IWC

10.18

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
13.2336	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	18.5
10	18
10	18.2
10	18.2
10	17.5

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	16.2
10	16.2
10	16.8
10	16.2
10	15.8

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-4562-6212	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	4/15/2020	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.98	1.00
Mean used in Calculation (transformed)	1.37	1.41
Variance used in Calculation (transformed)	0.007	0.000
Standard Deviation of Transformed Data	0.081	0.000
CV of Transformed Data	0.059	0.000
n	4	4

Mean Percent Effect at the IWC

-2.56

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.6643	3	1.6377	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	10		
10	10		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	10		
10	10		
10	10		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	11-1541-8122	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	4/15/2020	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.84	0.82
Mean used in Calculation (transformed)	1.17	1.13
Variance used in Calculation (transformed)	0.008	0.004
Standard Deviation of Transformed Data	0.087	0.062
CV of Transformed Data	0.074	0.055
n	5	5

Mean Percent Effect at the IWC

2.62

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
6.4302	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	91		
100	79		
100	90		
100	82		
100	78		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	76		
100	88		
100	80		
100	85		
100	80		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	11-1541-8122	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	4/15/2020	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.90	16.08
Mean used in Calculation (non-transformed)	17.90	16.08
Variance used in Calculation (non-transformed)	0.570	0.137
Standard Deviation of Raw Data	0.755	0.370
CV of Raw Data	0.042	0.023
n	5	5

Mean Percent Effect at the IWC

10.17

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
8.7760	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10 18.2
10 17
10 17.5
10 17.8
10 19

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10 15.5
10 16.2
10 16.2
10 16
10 16.5

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-5867-9077	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	5/1/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.86	0.69
Mean used in Calculation (transformed)	1.19	0.98
Variance used in Calculation (transformed)	0.004	0.002
Standard Deviation of Transformed Data	0.060	0.048
CV of Transformed Data	0.050	0.049
n	5	5

Mean Percent Effect at the IWC

19.72

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.0043	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	87		
100	87		
100	92		
100	83		
100	82		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	65		
100	72		
100	71		
100	64		
100	74		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	12-5867-9077	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	5/1/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	17.42	15.78
Mean used in Calculation (non-transformed)	17.42	15.78
Variance used in Calculation (non-transformed)	0.162	0.032
Standard Deviation of Raw Data	0.402	0.179
CV of Raw Data	0.023	0.011
n	5	5

Mean Percent Effect at the IWC

9.41

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
17.3014	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17.8
10	17
10	17.8
10	17
10	17.5

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	16
10	15.5
10	15.8
10	15.8
10	15.8

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	20-9567-2622	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	8/5/2020	Test Type	Acute
Duration	95h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.93	0.90
Mean used in Calculation (transformed)	1.30	1.25
Variance used in Calculation (transformed)	0.022	0.000
Standard Deviation of Transformed Data	0.147	0.000
CV of Transformed Data	0.113	0.000
n	4	4

Mean Percent Effect at the IWC

2.70

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.6236	3	1.6377	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	8		
10	10		
10	9		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	9		
10	9		
10	9		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	15-5993-9967	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	8/5/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.84	0.21
Mean used in Calculation (transformed)	1.16	0.47
Variance used in Calculation (transformed)	0.004	0.004
Standard Deviation of Transformed Data	0.062	0.064
CV of Transformed Data	0.054	0.137
n	5	5

Mean Percent Effect at the IWC

75.36

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-11.2259	7	1.8946	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	88		
100	84		
100	76		
100	83		
100	87		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	23		
100	17		
100	27		
100	14		
100	22		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	15-5993-9967	Test Species	<i>M. pyrifera (giant kelp)</i>
Test Date	8/5/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.70	8.70
Mean used in Calculation (non-transformed)	16.70	8.70
Variance used in Calculation (non-transformed)	0.095	0.294
Standard Deviation of Raw Data	0.308	0.542
CV of Raw Data	0.018	0.062
n	5	5

Mean Percent Effect at the IWC

47.90

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-14.5156	5	2.0150	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	16.5		
10	16.8		
10	17.2		
10	16.5		
10	16.5		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	9		
10	8.75		
10	9		
10	7.75		
10	9		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	14-9645-1595	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/9/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.81	0.83
Mean used in Calculation (transformed)	1.12	1.15
Variance used in Calculation (transformed)	0.000	0.003
Standard Deviation of Transformed Data	0.017	0.053
CV of Transformed Data	0.015	0.046
n	5	5

Mean Percent Effect at the IWC

-2.46

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
12.5994	4	2.1318	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	80		
100	81		
100	82		
100	83		
100	80		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	77		
100	83		
100	85		
100	88		
100	83		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	14-9645-1595	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/9/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.22	16.38
Mean used in Calculation (non-transformed)	16.22	16.38
Variance used in Calculation (non-transformed)	1.492	0.212
Standard Deviation of Raw Data	1.221	0.460
CV of Raw Data	0.075	0.028
n	5	5

Mean Percent Effect at the IWC

-0.99

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.1924	5	2.0150	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	16.8		
10	14.5		
10	15.8		
10	16.2		
10	17.8		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	15.8		
10	16.8		
10	16		
10	16.8		
10	16.5		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-0321-3433	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/23/2020	Test Type	Chronic
Duration	49h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.87	0.79
Mean used in Calculation (transformed)	1.20	1.10
Variance used in Calculation (transformed)	0.002	0.001
Standard Deviation of Transformed Data	0.046	0.033
CV of Transformed Data	0.038	0.031
n	5	5

Mean Percent Effect at the IWC

8.99

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.1070	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	87		
100	85		
100	91		
100	83		
100	88		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	79		
100	81		
100	75		
100	78		
100	82		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-0321-3433	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	9/23/2020	Test Type	Chronic
Duration	49h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	19.50	17.00
Mean used in Calculation (non-transformed)	19.50	17.00
Variance used in Calculation (non-transformed)	0.170	0.000
Standard Deviation of Raw Data	0.412	0.000
CV of Raw Data	0.021	0.000
n	5	5

Mean Percent Effect at the IWC

12.82

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
17.1737	4	2.1318	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	19.8
10	19.5
10	19.2
10	19
10	20

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	17
10	17
10	17
10	17
10	17

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	20-9298-0974	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	10/7/2020	Test Type	Chronic
Duration	48h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.81	0.82
Mean used in Calculation (transformed)	1.12	1.13
Variance used in Calculation (transformed)	0.006	0.001
Standard Deviation of Transformed Data	0.079	0.038
CV of Transformed Data	0.071	0.033
n	5	5

Mean Percent Effect at the IWC

-1.74

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
9.4021	6	1.9432	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	86		
100	78		
100	77		
100	74		
100	88		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	86		
100	80		
100	84		
100	80		
100	80		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	20-9298-0974	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	10/7/2020	Test Type	Chronic
Duration	48h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	14.58	15.20
Mean used in Calculation (non-transformed)	14.58	15.20
Variance used in Calculation (non-transformed)	0.332	1.945
Standard Deviation of Raw Data	0.576	1.395
CV of Raw Data	0.040	0.092
n	5	5

Mean Percent Effect at the IWC

-4.25

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
6.5318	4	2.1318	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	14.2
10	14.8
10	14.2
10	15.5
10	14.2

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	15
10	15.2
10	14.5
10	13.8
10	17.5

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk Riper WWTP
Test ID	10-3587-0125	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	10/29/2020	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.90	0.43
Mean used in Calculation (transformed)	1.27	0.71
Variance used in Calculation (transformed)	0.039	0.024
Standard Deviation of Transformed Data	0.199	0.153
CV of Transformed Data	0.157	0.217
n	4	4

Mean Percent Effect at the IWC

52.78

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
-2.7621	5	1.4759	

Results

Fail Sample is Toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	9		
10	7		
10	10		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	3		
10	6		
10	5		
10	3		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	02-2482-6259	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	10/21/2020	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.78	0.90
Mean used in Calculation (transformed)	1.08	1.25
Variance used in Calculation (transformed)	0.002	0.000
Standard Deviation of Transformed Data	0.040	0.022
CV of Transformed Data	0.037	0.018
n	5	5

Mean Percent Effect at the IWC

-15.64

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
26.5277	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	81		
100	77		
100	81		
100	73		
100	78		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	89		
100	90		
100	89		
100	92		
100	91		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	20-9298-0974	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	10/21/2020	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.56	14.64
Mean used in Calculation (non-transformed)	16.56	14.64
Variance used in Calculation (non-transformed)	0.713	0.248
Standard Deviation of Raw Data	0.844	0.498
CV of Raw Data	0.051	0.034
n	5	5

Mean Percent Effect at the IWC

11.59

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
6.1616	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	15.5		
10	16.2		
10	16.5		
10	16.8		
10	17.8		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	14.2		
10	15.5		
10	14.5		
10	14.5		
10	14.5		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	11-8855-7332	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	2/24/2021	Test Type	Acute
Duration	94h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.93	0.95
Mean used in Calculation (transformed)	1.30	1.33
Variance used in Calculation (transformed)	0.022	0.009
Standard Deviation of Transformed Data	0.149	0.094
CV of Transformed Data	0.115	0.071
n	4	4

Mean Percent Effect at the IWC

-2.50

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.8593	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

11	11
10	10
10	9
10	8

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

10	10
10	9
10	10
10	9

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-6866-6539	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/24/2021	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.88	0.70
Mean used in Calculation (transformed)	1.22	1.00
Variance used in Calculation (transformed)	0.003	0.002
Standard Deviation of Transformed Data	0.056	0.045
CV of Transformed Data	0.046	0.045
n	5	5

Mean Percent Effect at the IWC

19.82

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
3.0405	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	85		
100	89		
100	90		
100	83		
100	92		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
100	69		
100	68		
100	71		
100	67		
100	77		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	09-6866-6539	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	2/24/2021	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	16.10	15.22
Mean used in Calculation (non-transformed)	16.10	15.22
Variance used in Calculation (non-transformed)	0.420	2.072
Standard Deviation of Raw Data	0.648	1.439
CV of Raw Data	0.040	0.095
n	5	5

Mean Percent Effect at the IWC

5.47

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
4.6288	4	2.1318	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	17.2		
10	15.5		
10	16		
10	15.8		
10	16		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	15.5		
10	16.8		
10	13		
10	14.8		
10	16		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	16-4260-8545	Test Species	<i>A. bahia (mysid shrimp)</i>
Test Date	5/5/2021	Test Type	Acute
Duration	96h	Endpoint	Survival
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.95	0.97
Mean used in Calculation (transformed)	1.33	1.37
Variance used in Calculation (transformed)	0.009	0.006
Standard Deviation of Transformed Data	0.094	0.079
CV of Transformed Data	0.071	0.058
n	4	4

Mean Percent Effect at the IWC

-2.49

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.5434	5	1.4759	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
10	9		
10	10		
10	9		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	10		
8	8		
10	10		
10	9		

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-7021-5685	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	6/4/2021	Test Type	Chronic
Duration	47h	Endpoint	Germination
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Percent Mean of Raw Data	0.92	0.74
Mean used in Calculation (transformed)	1.28	1.04
Variance used in Calculation (transformed)	0.001	0.001
Standard Deviation of Transformed Data	0.026	0.023
CV of Transformed Data	0.021	0.022
n	5	5

Mean Percent Effect at the IWC

19.21

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
5.7799	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	92
100	93
100	92
100	92
100	89

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)

100	75
100	73
100	71
100	76
100	75

TST Summary Sheet

Lab Name	Pacific EcoRisk	Client Name	Elk River WWTP
Test ID	17-7021-5685	Test Species	<i>M. pyrifera</i> (giant kelp)
Test Date	6/4/2021	Test Type	Chronic
Duration	47h	Endpoint	Germ-Tube Length
IWC	100		

Statistic	Control	Instream Waste Concentration (IWC)
Mean of Raw Data	15.44	13.48
Mean used in Calculation (non-transformed)	15.44	13.48
Variance used in Calculation (non-transformed)	0.863	0.352
Standard Deviation of Raw Data	0.929	0.593
CV of Raw Data	0.060	0.044
n	5	5

Mean Percent Effect at the IWC

12.69

Calculated t-value	Degrees of Freedom	Critical t-value	Percent Effect (if no variance)
4.6426	7	1.8946	

Results

Pass Sample is Non-toxic

Raw Data

Control Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	15.2		
10	16.8		
10	14.2		
10	15.5		
10	15.5		

Instream Waste Concentration Data			
Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	Number of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
10	12.8		
10	14		
10	14.2		
10	13.2		
10	13.2		